

WHAT IS CLAIMED:

1. An elastic film comprising:

a microporous film layer comprising a thermoplastic polyurethane elastomer and a filler, said thermoplastic polyurethane elastomer comprising hard segments and soft segments, said film layer having an original length and a stretched length, said film layer having been stretched and having a permanent elongation of at least two times its original length thereby forming micropores adjacent filler particles;

said thermoplastic polyurethane elastomer undergoing phase separation between said soft segments and said hard segments after said film layer has been stretched, said film layer having an WTVR of at least 1000g/m^2 - 24 hours.
2. An elastic film as described in claim 1, wherein said microporous film layer is elastic such that, upon application of a force is stretchable to a biased length of at least 133% of its relaxed length and will recover at least 50% of its elongation upon release of said force.
3. An elastic film as defined in claim 1, wherein said thermoplastic polyurethane elastomer comprises an ether-based polyurethane.
4. An elastic film as defined in claim 1, wherein said thermoplastic polyurethane elastomer comprises an ester-based polyurethane.
5. An elastic film as defined in claim 1, wherein said film layer contains said filler in an amount of at least 20% by volume.
6. An elastic film as defined in claim 1, wherein said film layer contains said filler in an amount of at least 30% by volume.
7. An elastic film as defined in claim 1, wherein said film layer has an WVTR of at least 2000g/m^2 - 24 hours.
8. An elastic film as defined in claim 1, wherein said filler comprises calcium carbonate, barium sulfate, or mixtures thereof.
9. An elastic film as defined in claim 1, wherein said film layer has

a final unbiased length in addition to said original length and said stretched length, and wherein, after being stretched from its original length to the stretched length, said film layer is relaxed to said final unbiased length, said final unbiased length being at least two times the original length, said thermoplastic polyurethane elastomer undergoing phase separation after being relaxed to said final unbiased length.

10. An elastic film as defined in claim 9, wherein said stretched length is from about four times to about seven times the original length and said final unbiased length is from about three times to about five times the original length.

11. An elastic film as defined in claim 1, wherein said film layer has a basis weight of less than about 100 gsm.

12. An elastic film as defined in claim 1, wherein the thermoplastic polyurethane elastomer undergoes phase separation for at least 1 hour after having been stretched.

13. An elastic film as defined in claim 1, wherein the thermoplastic polyurethane elastomer undergoes phase separation for at least 24 hours after having been stretched.

14. An elastic film comprising:

a thermoplastic polyurethane elastomer layer containing a filler, said filler being present in an amount of at least 20% by volume, said film being stretched an amount sufficient to form micropores within said layer, said thermoplastic polyurethane elastomer comprising an ether-based polyurethane or an ester-based polyurethane.

15. An elastic film as defined in claim 14, wherein said thermoplastic polyurethane elastomer contains hard segments and soft segments and wherein phase separation between said soft segments and said hard segments has occurred after said film has been stretched.

16. An elastic film as defined in claim 15, wherein said film has

been stretched at least four times its original length.

17. An elastic film as defined in claim 15, wherein said film has been stretched from about four times to about seven times its original length to a stretched length and then relaxed to a final unbiased length prior to a substantial amount of said phase separation occurring, said
5 final unbiased length being at least two times said original length.

18. An elastic film as defined in claim 14, wherein said film has an WVTR of at least 2000g/m^2 - 24 hours.

19. An elastic film as defined in claim 14, wherein said film is
10 elastic such that, upon application of a force, is stretchable to a biased length of at least 133% of its relaxed length and will recover at least 50% of its elongation upon release of said force.

20. A process for producing an elastic film comprising the steps of:

15 forming a film from a thermoplastic polyurethane elastomer, said thermoplastic polyurethane elastomer containing hard segments and soft segments, said film further containing a filler;

stretching said film an amount sufficient for micropores to form; and

20 thereafter curing said film in a stretched state, wherein said thermoplastic polyurethane elastomer undergoes phase separation between said hard segments and said soft segments.

21. A process as defined in claim 20, wherein said cured film is elastic such that, upon application of a force, the film is stretchable to a
25 biased length of at least 133% of its relaxed length and will recover at least 50% of its elongation upon release of said force.

22. A process as defined in claim 20, wherein said cured film has an WVTR of at least 1000g/m^2 - 24 hours.

23. A process as defined in claim 20, wherein said film is

stretched at least three times its original length.

24. A process as defined in claim 20, wherein said film contains said filler in an amount of at least 20% by volume.

25. A process as defined in claim 20, wherein said thermoplastic polyurethane elastomer comprises an ether-based polyurethane.

26. A process as defined in claim 20, wherein said thermoplastic polyurethane elastomer comprises an ester-based polyurethane.

27. A process as defined in claim 20, wherein said film is formed by extrusion.

28. A process as defined in claim 20, further comprising the step of relaxing said film after stretching said film to an unbiased final length prior to curing, said unbiased final length being at least two times the original length of the film.

29. A process as defined in claim 28, wherein said film is stretched from about four times to about seven times its original length and said unbiased final length is from about three times to about five times its original length.

30. A process as defined in claim 20, wherein said film undergoes phase separation for at least 1 hour in the stretched state.

31. A process as defined in claim 20, wherein said film undergoes phase separation for at least 24 hours in the stretched state.

32. A laminate comprising:

an elastic film comprising a thermoplastic polyurethane elastomer containing a filler, said filler being present in an amount of at least 20% by volume, said film being stretched an amount sufficient to form micropores, said thermoplastic polyurethane elastomer comprising an ether-based polyurethane or an ester-based polyurethane; and

a support layer bonded to said elastic film.

33. A laminate as defined in claim 32, wherein said thermoplastic

polyurethane elastomer contains hard segments and soft segments and wherein phase separation between said soft segments and said hard segments occurs after said film has been stretched.

5 34. A laminate as defined in claim 32, wherein said film has been stretched at least four times its original length.

35. A laminate as defined in claim 32, wherein said film has been stretched from about four times to about seven times its original length to a stretched length and then relaxed to a final unbiased length prior to a substantial amount of said phase separation occurring, said final
10 unbiased length being at least two times said original length.

36. A laminate as defined in claim 32, wherein said film has an WVTR of at least 2000g/m^2 - 24 hours.

37. A laminate as defined in claim 32, wherein said film is elastic such that, upon application of a force, is stretchable to a biased length of
15 at least 133% of its relaxed length and will recover at least 50% of its elongation upon release of said force.

38. A personal care article comprising the laminate of claim 32.

39. A laminate as defined in claim 33, wherein said laminate comprises a stretch-bonded laminate.

20 40. A laminate as defined in claim 33, wherein said laminate comprises a neck-bonded laminate.